In the specification:

Please amend the specification as follows:

[0007] Also due to the aforementioned and other traditional imaging tube characteristics, the materials and gases used to manufacture the imaging tubes can be limited and extensive. For example, due to backscattering of electrons in traditional imaging tubes, a copper electron collector is used between the cathode and the anode to remove heat. Another limiting example is the inability to use low-Z gases due to increasing vapor pressure during imaging tube use, caused [[bys]] by spit activity and arcing~~, low-Z~~. Low-Z gases can enhance heat transfer between an anode and an imaging tube frame. The limitation of available gases and existing vacuum environment also requires vacuum compatible lubricants for use on anode bearings. The limitation on lubricants limits the ability to produce a more quiet, reliable, and inexpensive anode bearing.

[0026] Since the beam source 12 is sealed, the low-pressure cavity [[50]] 58 may be either a vacuum or filled with low-pressured gas to enhance heat transfer between the anode 30 and the frame 36. The low-pressured gas may be any low-Z substance such as helium, nitrogen, argon, or other low-Z substance or a combination thereof. The pressure of the low-pressured gas is adjusted and dependant upon the substance used, as to minimize degradation of the electron beam 40 through scattering of electrons. The use of low-pressured gas also provides for flexibility in types of bearing lubricant that may be used. For example, bearings 60 used on a rotating shaft 62 of the anode 30 do not need to be coated steel balls as used in imaging tube applications that are exhausted to create a vacuum, but rather may be bearings having other types of coatings known in the art.

[0029] Since energy deposition in thicker layers of material is higher than thin layers, a thick layer of protective material 65 may be installed on the source window [[64]] 54 to protect the window 54 during manufacturing and assembly processes. The protective layer may also be formed from Si or other similar material known in the art. The protective layer may then be removed upon installation by operating the imaging tube and allowing the electron beam 40 to pass through the thin layer and melt the protective layer.

[0032] The anode 30 may be a stationary or rotating anode having the target 32. The target 32 has approximately the same voltage potential as the source window 54. Since there is no high electromagnetic field gradient present at the target [[30]] 32 and other internal surfaces 70, as in traditional imaging systems, seasoning of the internal surfaces 70 within the imaging tube 16 is minimized. Other internal surfaces 70 may include an internal surface of the frame 36 or an exterior surface of the beam source 12, as well as others. Reduction of the electric field gradients also reduces the incidence of spit activity.